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MOOCs (MOOCs : Massive Open Online Courses) on SWAYAM : Challenges and Support for Higher Education

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Abstract:
Application of Information and Communication technology (ICT) changes every step of our lives. Global education system also drastically shifted from the traditional mode of learning system to digital mode and somewhere blended mode of learning environment. In this regard one of the initiati ves of Government of India is to creating Online Platform for digital learning named SWAYAM, for MOOCs (Massive Open Online Courses). Purpose of this paper is to identify and highlight the specific features of SWAYAM portal that the support the digital learning on higher education system. The role of Librarian and LIS professionals are also identified.For fulfillment of the basic purpose good numbers of literatures are concerns regarding origin of the emergence of digital learning systems in India and their features and different parameters. More emphasis is given on MOOCs (Massive Open Online Courses), which are a fundamental step towards digital education of India. MOOCs courses are available on the Indian education system under the SWAYAM portal.A comparative discussion is done on MOOCs opportunities in Indian scenario.
Identify ethics of LIS professional and their role to successful utilization SWAYAM platform a online survey was done through structure questionnaire.This paper discuss with specific characteristics of SWAYAM and a detailed understanding of the SWAYAM platform. Different challenges regarding the SWAYAM platform were also identified. Some way out also proposes for future up gradation from LIS professional point of view.This paper emphasis on theoretical discussion of digital learning environment in Indian higher education system with special reference to SWAYAM. Due to limitation of time an online survey was done through Google form format. The back born of this study is existing literatures but its finding and challenges focusing the light of practical implementation of virtual learning platform for higher education system in India with the help of SWAYAM Platform. Also identify the role and responsibility of LIS professional in this regard.

Keywords: Digital Learning; HybridModel; ICT; MOOCs; SWAYAM

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1. Introduction:

ICT (Information and Communications Technology) is a huge umbrella that includes abundant types of communication devices. The application of ICT (Information Communication Technology) changes every step of our lives. Recently, the teaching – learning environment has also been drastically changed by the implication of ICT. Today's educational systems provide more concern for the student-teacher interaction and participation of both. Instead of being teacher-centered, it is student-centered, and by using a range of materials and multimedia through ICT applications, students can learn more effectively. But in order to satisfy the needs of the students, teachers must be aware of how ICT and multimedia are used in the classroom. This is because it is impossible to adequately integrate ICT into the educational system without knowledge of its uses. The implication of ICT enabled the teachers to present the content more resourcefully in an effective and relevant way to the remote corners of society. Simultaneously Librarian /LIS Professional also have a well skill and knowledge with application of ICT enhanced learning system. ICT is a scientific, technological, and engineering discipline and management technique used in handling information and its application to an association with social, economic, and cultural matters (UNESCO, 2002). According to Neeru Rathee (2017), on the basis of the evidence from research, there are three main types of ICT that are useful for teachers in their teaching and learning processes. They are:

i) Integrated Approach: This strategy makes use of ICT in a purposeful manner to enhance students' ability with a particular topic or skill.

ii) Enhancement Approach: This strategy makes use of ICT as a resource to make content more interactive, which will improve the quality of the information.

iii) Complementary Approach: This strategy makes use of ICT as a tool to improve students' learning capacity.

2. Objective of the study:

• To identify and emphasize the unique features of SWAYAM portal that provide study material and courses from class 9 to higher education and complement the skill-enhancement/ value added courses that are part of the regular curricula.

• To understand that the Swayam platform (MOOCs) with its potentially and threats on the Indian Scenario and its effects on LIS professionals with their expertise skill and knowledge and ethics.

• To comprehend the kinds of skills needed for LIS professionals that will be expected to support real-world MOOC exercises on Swayam portal.

• SWAYAM awareness among LIS professionals and students.

3. Methodology of the Study:

- A good number of literature studies emphasize light on digital learning, MOOCs and Swayam platform on Indian scenario.
- For obtaining responses from LIS professionals a structured questionnaire (google form) distributed among different Librarian and LIS professional WhatsApp groups and Social Media sites specifically for LIS professionals.
- The questionnaire link was distributed through social networking sites and platforms like (Lislink, Lis forum, and different LIS groups in Facebook, different LIS groups in WhatsApp, Twitter, and LinkedIn etc.).
- It is also mentioned that social media sites are selected for getting responses from respondents because LIS professionals from remote corners of the country are available with these media sites. On this platform are also accessible 24x7 hours also.
- Within 1month 156 responses were received from LIS Professional and Librarians.

4. Limitations of the study:

Constraints of time are the main drawback of the present study. Questionnaire was distributed through digital form among LIS Professionals on social networking sites. No physical connection was done. Sometimes telephone conversations are taken for doubt clearing.

5. Digital Learning:

With the extensive use of the Internet and wireless communication technology, a new mode of learning has emerged: mobile learning, e-learning, digital learning, instant messaging, etc. In this regard, digital teaching materials are very much essential for coping with the situation of ICT-based educational systems. Yoon et al. (2012) stated that digital learning (E-Learning) was first proposed by Jay Cross in 1999. With the advance and development of technology tools, different explanations and terminology have emerged, such as internet-based training, web-based training, on-line learning, distance learning. By comprehensively analyzing the viewpoints of several researchers, digital learning could be divided into four parts (Keane, 2012).

(A) Digital teaching materials: It emphasizes how students can learn by extracting some of the contents of digital educational materials. E-books, digitized data, or content delivered using other digital techniques are all examples of what is referred to as "digital teaching material contents."

(B) Digital tools: It revealed the need for students to continue their educational activities using digital devices, including smart phones, tablets, laptops, and desktop computers.

(C) Digital delivery: It defines the possibility of using intranets, the internet, and satellite

television to deliver learning activities to students.

(D) Autonomous learning: It focuses on students using digital learning on their own to participate in offline or online learning activities. It places a strong emphasis on individual, independent learning and calls for learners to participate in learning activities.

5.1 Digital Learning and MOOCs

Perhaps it is mentioned that ICT has implications for teaching and learning systems that enhance digital learning systems. Digital learning appeared in two types of mode a) Synchronous Media (Synchronous communication occurs in real time, can take place face-to-face and can take place irrespective of distance.) and

b) Asynchronous media (Asynchronous communication is not immediately received or responded to by those involved).

In India, the online higher education system's MOOC (Massive Open Online Courses) is a significant milestone. MOOC is an open platform in the Indian educational system; on this platform, both blended learning and online learning are possible. The only criteria are internet connectivity. A large-scale course is available online for free, and may be used from any location. The open course materials available on MOOC (Swayam) are prepared by experts in various fields while also receiving frequent updates. So MOOCs have the tremendous dynamic power to revolutionize teaching and learning with e-learning.

5.2 Pedagogy of MOOCs:

A MOOC's design and development are governed by some scientific and arbitrary ethics, and at the moment the majority of institutions, universities, and organizations adhere to these standards. Following are basic principles.

i) e-Tutorial: The MOOC course includes audio and video materials with a range of presentation techniques. In this situation, subtitles—most often in English, though other languages may be added—are quite helpful. The lesson audio/videos should typically last 5 to 10 minutes. There are several helpful choices in every technical course that uses animations, simulations, video demonstrations, and virtual labs for subject comprehension.

ii) e-Content: It contains text, e-books, PDFs, ppt files, illustrations, documents, and interactive simulations whenever required.

iii) Web Resources: It contains related web links of research papers and journals, articles, case studies etc.

iv) Self-Assessment: The exercise of self-assessment is very beneficial for students. Self-assessments should be a part of every course, in some capacity, in every session and topic. The objective multiple-choice questions, fill-in-the-blank questions, true or false questions,

matching questions, short answer questions, and long answer questions can all be used in the self-assessment. The design of a MOOC should include required student engagement because it is crucial to the success of a MOOC.

v) Assessment through Assignments: The two main methods used to evaluate assignments are: (a) automatically graded multiple-choice questions or automatically assessed programming assignments; and (b) peer review assessment, in which students rate their own work using a set of predetermined criteria.

vi) Discussion Forums: The primary means of student engagement between course participants and instructors is through discussion forums, where students submit questions and other students respond. Forums often include threads for general conversation, discussion of particular subjects, course feedback, technical feedback, etc.

vii) Readings: Most MOOCs do not require students to buy books, and most readings are available online or provided by course instructors; however, theCourse makes money through an affiliate program with Amazon.com (Rivard, 2013).

viii)Live video sessions: In addition to the weekly lectures, there are live video sessions with the course instructor.

ix) Activities: A range of instructional activities are offered, with the aim of allowing Students to further test their understanding of the course concepts.

x) Additional video resources: These were scripted videos to help with the Comprehension of scenes.

xi) Social media: Students are encouraged to continue their discussions on devoted pages on other social media platforms, such as Facebook, Youtube, and Google+

.Siemens, Hill, Downes, Daniel, and others distinguished two different models of MOOCs:

cMOOC model (c for connectivity), which "emphasizes creation, creativity, autonomy, and social networking learning" and "focuses on knowledge creation and generation." The cMOOCs stand in the tradition of connectivist philosophy, and refer to the work of Ivan Illich.

xMOOC model— which emphasizes a "more traditional learning approach through video presentations, short quizzes, and testing" and focuses on knowledge duplication". (Siemens, 2012)

6. MOOCs and Indian scenario:

The Government of India has taken the initiative for a digital learning system and an enhanced program called SWAYAM, which is a program to achieve the three fundamental objectives of education policy, namely access, equity, and quality, as it moves towards a digital India. Study Webs of Active Learning for Young Aspiring Minds (SWAYAM), a tool for the self-actualization of top-notch learning materials across the nation, is known by the acronym SWAYAM. The National Programme on Technology Enhanced Learning (NPTEL), a collaborative initiative of the IITs and IISc, was launched in 2003, marking the beginning of SWAYAM's journey. With online Web and video courses in engineering, science, and humanities streams, this was the first significant attempt at e-learning in the nation. The launch of the National Mission on Education through ICT (NMEICT) in February 2009 further broadened the scope, catering to all disciplines in the higher education sector. SWAYAM is one of the most popular MOOCs, a kind of Indian MOOC, with an integrated platform and portal for online courses (Credit/ non-credit) for KG-Research and professionals.

6.1. SWAYAM: Study Webs of Active Learning for Young Aspiring Minds

SWAYAM, the fundamentally created courses offered on the MOOC platform, cover subjects from ninth grade through post-graduation. They are free to access from anywhere at any time, but we might have to make a minimum payment if we want a confirmation certificate. These course materials have been created by more than 1,000 distinguished professors and instructors from across the nation. The best quality content is currently being produced and delivered through three different courses, one by Professor Umesh Vazarani of UC Berkeley and two by IIT, Bombay; seven National Coordinators have been appointed, including the National Programme on Technology Enhanced Learning (NPTEL) for engineering, the University Grants Commission (UGC) for post-graduation, the Consortium for Educational Communication (CEC) for undergrads, and the National Council for Education (Website: https://swayam.gov.in/Home).Under the initiative of "Digital India" by the Government of India, SWAYAM creates a remarkable plethora of resources to take teaching and learning to a level where India can overcome obstacles like a lack of infrastructure. Courses in SWAYAM are hosted in four quadrants (i) video lectures; (ii) specially prepared reading materials that can be downloaded or printed; (iii) self-assessment tests, and (iv) an online discussion forum to clear any doubts.

6.1.1 The main Objectives and Features of SWAYAM are:

i. One-stop web and mobile based interactive e-content for all courses from High School to University level.

ii. High quality learning experience using multimedia on an anytime, anywhere basis.

iii. State of the art system that allows easy access, monitoring, and certification.
iv. Peer group interaction and discussion forum to clarify doubts.
v. A hybrid model of delivery that adds to the quality of classroom teaching.

Features of SWAYAM:

a. Cost Effective: The affordability of SWAYAM courses is one of their key draws. All courses from standard nine to post graduate are totally free of cost.

Carefully Crafted Courses: More than 1,000 academic experts who were carefully chosen from throughout the country have produced these courses. Tools that are audio-visual and multimedia are employed to improve the learning experiences of the students. As a result, SWAYAM NPTEL (National Programme on Technology Enhanced Learning) courses give all students access to a world of opportunities.

b. Systematic Learning: The SWAYAM portal has chosen a methodical approach to aid learners in their study. They can choose from four different quadrant types to learn the material. It has video lectures, study materials that can be downloaded or printed from the greatest instructors, as well as pre-made tests and quizzes for self-evaluation. The students can take the tests and pass them to become certified.

6.1.2 Coordinators of SWAYAM

In order to improve the quality of education, SWAYAM has nine coordinators, and they are:

- AICTE(All India Council for Technical Education) for self-paced and international coursesNPTEL (National Programme on Technology Enhanced Learning) for Engineering
- UGC (University Grants Commission) for non-technical post-graduation education
- CEC (Consortium for Educational Communication) for under-graduate education
- NCERT (National Council of Educational Research and Training) for school education
- NIOS (National Institute of Open Schooling) for school education
- IGNOU (Indira Gandhi National Open University) for out-of-school students
- IIMB (Indian Institute of Management, Bangalore) for management studies
- NITTTR (National Institute of Technical Teachers Training and Research) for the Teacher Training program (Source: swayam.gov.in)

It offers hundreds of courses that are taught at the high school, college, and university levels. The coordinators of high school courses are NIOS and NCERT. As far as undergraduate and postgraduate programs are concerned, they are offered by NPTEL, AICTE, CEC, IIMB, and UGC.

The course section of SWAYAM is divided into four quadrants –

SWAYAM Course Sections			
Quadrant I- e-Tutorial:	**Quadrant II- e-Content**	**Quadrant III- Web Resources:**	**Quadrant IV- Self-Assessment:**
Video and Audio Content in an organized form, Animation, Simulations, Virtual Labs.	PDF/e-Books/ illustration, video demonstrations, documents and interactive simulations wherever required.	Related Links, Open Content on internet, Case Studies, anecdotal information, historical development of The subject, articles	MCQ, Problems Quizzes, Assignments and solutions, Discussion forum topics, setting up the FAQ, and clarifications on general misconceptions.

The three guiding principles of education policy—access, equity, and quality—are thus the goals of the SWAYAM initiative. The goal of this decision is to open up the best teaching and learning tools to everyone, particularly the most disadvantaged. This program aims to narrow or erase the digital divide for students who have not been impacted by the digital revolution and are unable to participate in the knowledge economy as a whole (the knowledge economy is a state of affairs where knowledge has become the driving force of economic development).

6.1.3 Benefits of SWAYAM Online Course to Learners:

Better Opportunities: Students can enroll in courses that are in demand and advance their job prospects. With this strategy, NPTEL SWAYAM courses offerstudents have a wide variety of options.

Career Transition: SWAYAM courses are available to those who are interested in changing careers from their current ones. Students can enroll in classes to develop their skill sets and find the employment they want.

Self-Paced Learning: As the study resources are online, students can access them whenever they choose. They are constantly accessible via the SWAYAM portal, opening the door for self-paced study.

Credit Transfer: According to the 2016 UGC (Credit Framework for Online Learning Courses Using SWAYAM) Regulation, universities must identify courses for which SWAYAM credits can be applied to students' academic records.

The certification is one of the main advantages of finishing SWAYAM online courses. The students who qualify for a certificate will get one. These credentials would add value to your resume. Students also have the option of adding the credits to their scorecards. Thus, it will be a benefit to the pupils.

6.1.4 Challenges behind the SWAYAM:

A. Special attention is given on online examination and other models of evaluation. At

present still some psychological and technological barriers are found in both the teachers and students' communities. All institutions unable to provide appropriate technological support which are required for online teaching and learning and examination systems. So, there is a need for more and more awareness programs regarding online teaching learning systems and focus on its advantage. Higher education institutions must have proper initiation for technological support for smooth running of SWAYAM portal.

B. Confusion regarding credit transfer system: There is confusion on the credit-based system whether it would be possible for students to earn credit from MOOCs and combining credits from different institutions to get a degree if pre- requisites of the degree programme are fulfilled (Meta University). As per UGC notification the selection of courses to be considered for credit transfer is left to the institutions to decide rather than giving the option to the learner.

C. More Regional language program is needed with awareness program: Unless and until courses are made available in the regional languages the enrollment will be very restrictive. In the first phase of launch it is proposed to have bilingual content in English and Hindi. There are plans to convert them into other regional languages in the near future which will lead to a more successful SWAYAM program.

D. Repeated awareness program needed: Preparing the faculty for MOOCs delivery is going to be a major challenge requiring massive capacity building programmes. Training and re-training of faculty in content Development and course delivery is going to be one of the core areas where the government needs to focus on to make SWAYAM successful. Awareness among learners is also needed very much.

Beside the above-mentioned challenges, SWAYAM is a revolutionary path for the educational field in India, where coverage starts from class IX and ends at the higher education level. It is a glorious way to reach every corner of society and successfully achieve the motto "education for all."

7. Analysis: Role of Librarians, LIS Faculties, LIS Research scholars & LIS Professionals in SWAYAM Platform:

For collecting the responses from the Librarians, LIS Faculties, LIS Research Scholars and LIS professionals a structured questionnaire (google form) distributed among different Librarian, Faculties LIS research scholar and LIS professional WhatsApp groups and Social Media sites specifically for LIS professionals.

The questionnaire link was distributed through social networking sites and platforms like (Lislink, Lis forum, different LIS groups in Facebook, different LIS groups in WhatsApp, Twitter, and LinkedIn etc.).

After one month from the distributed questionnaire on online platform 156 responses

were collected for analysis.

7.1 Among 156 respondents 73% are Male and 27% are Female respondents.

Table 5.1

Gender of the respondents				
Gender	**LIS Professional**	**LIS Faculty**	**Researcher**	**Percentage (%)**
Male	77	23	14	73
Female	24	10	8	27
Total	101	33	22	100

7.2 Designation of the Respondent: According to an online survey it is found that the total number of responses are 156. The 65% are from LIS professionals including Librarian. 21% are Faculty members of the LIS Education, and 14% are researchers of LIS field.

Table 5.2

Designation of the Respondent		
Designation	**Number**	**Percentage (%)**
LIS Professional	101	65
Faculty	33	21
Researcher	22	14
Total	156	100

7.3 Qualification of the Respondent: It is found that the maximum number of respondents have a MLISc (Masters of Library and Information Science) degree, 21% are doing research in the field of Library and Information Science.

Table 5.3

Qualification of the Respondent		
Qualification	**Number**	**Percentage (%)**
BL I SC	32	21
MLISC	67	43
MPhil	24	15
Ph D	33	21
Total	156	100

7.4 Do you know the Swayam portal?

Respondents' opinion shows that 97% of respondents are well known about Swayam portal.

These results show that nowadays trends of the conventional system of education are closely associated with ICT based learning systems, because of its user-friendly characteristic that anywhere and anytime different MOOcs(Massive Open Online Course) courses are completed with their desired certificate.

7.5 Numbers Registration / login on Swayam platform.

76% of the LIS Professional already register /login on the Swayam portal for searching upcoming courses, they are very much interested in the online mode of in-service courses for professionals upgrading.

7.6 Number of respondents complete courses on Swayam portal.

It is found that 72% of total respondents completed different certificate courses for their professional development, self-skill development, and research methodology courses with full satisfaction. Among them, the majority completed a course on digital library.

7.7 Four quadrant of Teaching Learning process and their preference:

Maximum respondents (52%) are very much satisfied with all (four) quadrants of teaching process on Swayam. 26% of them most prefer Video Lectures.

Table: 7.7

Four quadrant of Teaching Learning process most prefer one		
Four quadrants	Number	Percentage (%)
Video Lectures	41	26
Self-Assessments	14	9
Reading material that can be downloaded or printed	15	10
An online discussion forum for clearing doubts	5	3
All of the above	81	52
Total	156	100

7.8 Do you think that users' awareness workshops were needed for successful implementation of Swayam?

From the response it is observed that 81% of respondents agreed that awareness workshops are needed for faculties and students also. So, it is stated that a hand hold workshop necessary on new registration, enrollment, certification process and credit transfer process for successful implementation of Swayam.

7.9 Do you think that the Central Library became a "Swayam Hub" for registration of the respected Institution?

69% of the total respondents proposed that the library became the Swayam Hub of the mother institution, from where students are enrolled and complete their course of MOOCs. 19% and 12% of total population said no and no comment response respectively.

Table 5.9

Opinion on Library became a "Swayam Hub" for the Institution				
Respondent	Yes	No	No comment	Total
LIS Professional	75	20	6	101
LIS Faculty	22	5	6	33
Researcher	11	4	7	22
Total	108 (69%)	29 (19%)	19 (12%)	156 (100%)

7.10.Rating the Swayam.

For rating Swayam portal on the concept of whether MOOCs on Swayam portal are relevant or not where 5 stands for more relevant and 1 stands for not relevant. It is found from the response that 57% of LIS professional including faculty stated that the Swayam platform very relevant in current education system only 2% response that it is not relevant.

Table 7.10

Rating of Swayam Portal					
Rate	LIS Professional	LIS Faculty	Researcher	Total	Percentage
1(lowest)	3	0	0	3	2%
2	8	3	0	11	7%
3	9	8	1	18	12%
4	12	10	13	35	22%
5(Highest)	69	12	8	89	57%
Total	101	33	22	156	100%

8. Recommendation and Conclusion:

Libraries and information centers are the main spine of any social institution. The impact of ICT changes the users' requirements, information environment and Web/Google's attempt to supplant reference librarians associated with traditional Librarian. It is certain that there will be a shift from print to digital, changes to forms and formats, and delivery methods as a result of the use of disruptive technologies. E-resources, e-courseware, and e-learning are currently the primary learning systems that supplement traditional classroom instruction. The current learning system is referred to as a blended learning system. Therefore, LIS professionals are sufficiently knowledgeable and skilled to handle the current scenario.

The next great thing in online learning and higher education is thought to be the MOOCs, which are a growing platform. As a component of the total online learning environment, MOOCs do seem to be here to stay. Just as libraries offer "free" and open access to learning resources, MOOCs also offer such access to learning possibilities. Libraries support a strong feeling of community and provide just-in-time learning needs; connection MOOCs in particular may have comparable good effects and expand library learning offerings. Libraries can play a variety of roles in the MOOC production, support, evaluation, and preservation processes. From online survey it is conclude that LIS Professional are very interested with Swayam for MOOCs courses. Several suggestions are identified those are given below.

- Provide more in- service up gradation courses for all professionals on Swayam platform.
- Introducing regional language courses are including on MOOCs.
- Message altering systems are needed for introducing new courses on MOOCs.
- Frequent awareness program needed for successful implementation of MOOCs on Swayam platform. Responsibility of LIS Professional to aware and enroll on Swayam platform for MOOCs courses.

Explain MOOCs from the standpoint of the learner

- Librarians should be included in MOOC project teams; we must actually implement this suggested practice.

Equity and quality in education are the only solution to get up a nation. Educated citizen gradually develop their nation and they are the liquid human resources for the nation. SWAYAM is a self-actualization tool that offers options for lifelong learning, distant learning forms of education. With the SWAYAM PRABHA initiative, the SWAYAM project is extended even further with the goal of 32 MHRD educational DTH channels offering 24-hour curricula-based educational programming. It is suggested that the SWAYAM and SWAYAM PRABHA projects work in tandem, completing and enhancing one another. India is also up against many obstacles when it comes to SWAYAM's online education

offerings. Among them some are already address by SWAYAM. Regarding the adoptability of learning for SWAYAM course UGC provide a guideline that 20% of credits will be obtain from MOOCs offered in SWAYAM. SWAYAM can be play key role to the creation of a digital India, which is the government of India's goal.

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